

USES OF SOCIOOMETRY IN SUCCESSION PLANNING

Dr. Naveen Gupta*

Dr. Jyoti Kulshreshth**

ABSTRACT

Sociometry is the study of human connectedness. Moreno viewed society as composed of units made up of each individual and the essential persons in his or her life. Moreno called this smallest unit of measurement the social atom, comprised of all the significant figures, real or fantasized, and past and present. It is based on the fact that people make choices in interpersonal relationships. In common gathering, they make choices—where to sit or stand; choices to make friends and not to make, who is centre of attraction in the team and who is rejected or isolated.

The present paper is based on the test performed on the staff members of management department of one of the North India's largest educational institutions. This management department consists of only five members. The dynamics of inner relationship is analyzed on the bases of Sociograms and sociometrics. This will be helpful to trace out the star, mutual, isolate person in the team. We can use this type of configuration of relationships for overall development of the team.

Key Words: Sociometry, Sociograms, Star, Mutual, and Isolate.

* Director, Hindustan Institute of Management and Computer Studies, SGI, Agra

** Asstt. Professor, Anand Engineering College, SGI, Agra

Leadership is a great task in any team to manage the system. if we have a good leader as well as team we achieve our targets more easily and timely. But how to choose our leaders? Sometimes a popular person considered as a leader which may not be so, because there is vast difference between leadership and popularity. Leadership is not a popularity ticket. It is a call to productive, creative achievement with men and women of like-mind. In a democratic society voting is a fairly standard way of appointing “office-holders” whom we then look to for leadership. Unfortunately voting is no guarantee that leadership will emerge because voters’ opinions and criteria will always dictate how they vote.

Popularity may get a friend into a position but it does not necessarily get the right leader into the right position of authority to ensure productive and creative achievement with others. when we vote it is always for effective leadership not popular opinion or personal gain. In official system seniority is the criteria to appoint the project leader which may not be right for every time. We may feel comfortable with someone having totally different views than us. eg. we may not consider our best friend for taking advice for investing in share market. In a team of people we have some compassionate, empathetic and generous character, which becomes popular person of the team. While some have ability to take initiatives regarding the problem of the team, these dynamic and enthusiastic persons can become leader of that team. People would like to share their working (official problem) with them. So, for any organization it becomes very important to have right person at right place. Sociometry is a scientific tool through which we choose our perfect leader, popular person, mutual selection, mutual rejection isolated person etc.

What is Sociometry

The term Sociometry relates to its Latin etymology, socius means companion, and metrum means measure, so it is a way of measuring the degree of relatedness among people. Jacob Levy Moreno coined the term sociometry and conducted the first long range sociometric study from 1932-38 at New York training school for Girls. Moreno (1932) defines sociometry as “the inquiry into the evolution and organization of teams and the position of individuals within them. Moreno’s great contribution in working with people, who had reached an impasse in some area of life, was to shift them from being reporters of events to actors. He knew there were discrepancies between the verbal representation and actual action and he wanted to reduce it so, he greatly valued display. Moreno (1978) describe display includes action and interaction, the expression of body, and the dimensions of past, present and future .He describes that people have

incomplete perception of themselves and others, as well as perceptions which are lacking, weak, distorted or pathological, one sided and subjective. Where perceptions are clear and mutually confirmed, positive tele at work, which can be analyzed on the bases of sociometry.

Sociometry is a technique to study the structure of a team of people, to determine the extent to which the individuals are accepted in a team, and nature of interaction they have among themselves. According to Wolman (1937), sociometry is “a technique for the measurement of attraction and repulsion among people, which uses the methods of sociogram”

Moreno (1953) mention that “Sociometry is a method for describing, discovering and evaluating social status, structure, and development through measuring the extent of acceptance or rejection between individuals in a team. It is concerned with attractions and repulsions between individuals in a team as a person is asked to choose one or more persons according to more specified criteria. As the science of team organization, it attacks the problem not from the outer structure of the team, the team surface, but from the inner structure”. Sociometric explorations reveal the hidden structures that give a team its form; the alliances, the sub teams, the hidden beliefs, the forbidden agendas, the ideological agreements and the stars of the show. It helps us to get the leader of team, chains existing in the team, mutual relations which effects team’s performance and helps to make future chains, diagnosis of gaps or cleavages existing in the team, to know about misinterpretation of ourselves, recognize isolate persons and take remedial actions for them.

Why Sociometry

Why it is necessary to know the stars, chains, mutual and isolate in any team. As self is very important as self emergence is a phenomena which is totally depends on others Johnson (1970) mention that self emergence involves child’s continual adjustment to the behavior of others. As seed grows from earth similarly an individual grows from society, individual is an internal mental equipment while society liberates and limits our potentialities as individual. Society liberates and limits our potentialities as individual not only by offering definite opportunities and stimulations, not only by placing upon definite restraints and interferences, but also subtly and imperceptibly by molding our attitudes, beliefs morals and ideas.”Every self is insulated” mind communicates with mind but they do not form a single mind”. They form social relationship, which involves those process that operate between man and man, man and team and in constantly changing pattern of social life. Individual is always related to society and society is

network of social relationship (MacIver & Page1937).This relationship can be measure with the help of sociometry.

When individual meets they make a team. Inner structure of team depends on team member's individuality. Individuality is described in two aspects by Johnson (1970) as physical or biological individuality and sociological individuality. Strong individuality expresses more fully the spirit of quality. Individuality represents in each person's relations to other, acts autonomously, with his own interpretation of the claims of others upon himself, has some independence of judgment, some initiative, some discrimination, or some strength of characters. The degree in which a person exhibits these qualities shows the degree of individuality he or she possesses. In any team we always have different types of individuality and incessant struggle of diverse and opposing interests. This always affects the team performance. So it becomes very necessary to know about the team's strength and work on weaknesses As Moreno (1953) described that the complex of interpersonal relations in a team predefines a primary social; and psychological base of a team and the feature of this basement predefine the internal state of each person in the team, not only what the team is itself. Sociometry helps how the people behave in a team.

Objectives of the Study

- To trace out the star of the team on person specific criteria.
- To know the intensity of team cohesion.
- To make cohesive people teams to implement any hard projects in the planned time;
- To define a team structure and dynamics of its inner relations changes;
- To trace out the isolates in a team and take remedial action for them.

The Case Study

The present case study was performed in management department of one of north India's largest educational institutions. This department constitutes of only five members as staff. A Criteria is selected for the team. Moreno points out that the ideal criterion is one that helps further the life-goal of the subject. Moreno (1953) mentioned that," If the test procedure is identical with a life-goal of the subject he can never feel himself to have been victimized or abused. Yet the same series of acts performed of the subject's own volition may be a 'test' in the mind of the tester". He further explained that, "It is easy to gain the cooperation of the people tested as soon as they come to think of the test as an instrument to bring their wills to a wider realization, that it is not

only an instrument for exploring the status of a population, but primarily an instrument to bring the population to a collective self-expression in respect to the fundamental activities in which it is or is about to be involved.” So, Criteria are the basis for team members making choices in any network exploration, or team development. The criterion is chosen precisely for the purpose of the exploration and what the team wants to know about itself. A question which you ask yourself and others for which response is specific people is criteria of the study Sociometry test was performed on the basis of person specific criteria, for which we ask a question “With whom you wish to sit?”, to know the popular person of the team. Choices were related to their team only. Five member are given code A,B,C,D and E, in which A is head of the department and other faculty member are having same designation. Every member is told to make three choices as Positive, moderate and negative means the person whom you liked most, then the person who will be moderate choice for sitting for you and the person with whom you never wish to sit. Sociometrics of the team is given below;

Question: WITH WHOM YOU WISH TO SIT

SOCIOMETRICS

Total five members participated in the sociometry testing Their names are Mr. Sarma, MsGunjan, Ms Mathur, Mr. Datar and Ms Reena(names of the members are changed to maintain the privacy of individuals) for the study these names are coded as A,B,C,D,& E respectively. Table of indices is given below;

Employees	A	B	C	D	E
A	×	o	+	-	
B	+	×	o		-
C	+		×		o
D	+		o	×	
E	+		o		×
T+	4	0	1	0	0
T0	0	1	3	0	1
T-	0	0	0	1	1
Total	4	1	4	1	2

An analysis of Sociometrics is based on team index and private index. Team indexes provide evaluating the sociometrics status of a team of people participating in the investigation. In this

study we will calculate team indexes as Density, Cohesion, Stability and Intensity. While private indexes provide evaluating sociometric position of a member in a team who are participating in sociometric testing. We will very first focus on team indexes;

Team indices

- Density
- Cohesion
- Stability
- Intensity

Name	Description	Value
Density	The index describes the density of inner relations in the team.	0.25
Cohesion	The index describes the strength of mutual attraction of members in the team.	0.20
Stability	The index describes which minimal part of the team must be removed to divide the team to unrelated parts.	1.00
Intensity	The index describes the value of dissatisfaction of members by emotional relations in the team.	0.30

Density

The index describes the density of inner relations in the team.

$$P = \frac{M}{N(N-1)}$$

where M - the number of choices; N – the number of members in the team , which may be 2 or more .In the present team of five members

$$M=5, N=5$$

$$\text{So; } P = \frac{5}{5(5-1)} = \frac{5}{20} = 0.25$$

Minimum index value: 0 (there isn't any choices in the team), Maximul index value: 1 (the number of all possible choices is equal $N*(N-1)$), Range of index change: from 0 to 1.

Cohesion

The index describes the strength of mutual attraction of members in the team.

$$S = \frac{2*M}{N(N-1)}$$

where M- the number of mutual positive choices; N - the number of members in the team.

we can see that the index depends on the positive choices. . Its value is always the same both for positive and for negative choices.

$$M+= 2, N=5$$

$$S= 2*2/5(5-1)$$

$$S= 4/20=.20$$

Minimum index value: 0 (there isn't any positive choices in the team),Maximum index value: 2 (the number of all possible choices is equal $N*(N-1)$),Range of index change: from 0 to 2.

Stability

The index describes which minimal part of the team must be removed to divide the team to unrelated parts.

$$J=M+K-1/N-2$$

where ,M - the number of non-mutual choices; K - the number of pairs of mutual choices; N - the number of members in the team.

$$M=3 ; K=1 \text{ and } N=5$$

$$J= 3+1-1/5-2$$

$$= 3/3$$

$$= 1$$

Intensity

The index describes the value of dissatisfaction of members by emotional relations in the team.

$$N= 2*(M-2*K)/n*(n-1)$$

where ,M - the number of choices; K - the number of pairs of mutual choices; N - the number of members in the team.

$$M=5; N=5 ; K=1$$

$$N=2*(5-2*1)/5(5-1)$$

$$= 2*(3)/5*4$$

$$= 6/20$$

$$= .30$$

Minimum index value: 0 (all made choices are mutual),Maximum index value: 1 (the maximal number of choices of one type without mutual choices is and $K=0$),Range of index change: from 0 to 1.

Team density is .25 which shows the configuration of inner relationship is not in good position. Cohesion is also .25 which explores the strength of mutual attraction of members in the team. As its range is 0-2 so team cohesion is very weak in the present study. since member A was the common choice of the team but mutual choices are very low only Two person choose each other Stability is perfect in the team as we got only two negative choices in the team i.e no need to remove any part of the team. Value of dissatisfaction of members by emotional relations(intensity) is .30, shows the existence of tension in the team. There is need to work on maintenance of inner relations of the team and make some exercise to develop mutual relations in the team.

Private Indexes

- Weight
- Emotional effusiveness
- Satisfaction
- Status

Name at top row is the same as name of member at left column of Sociometrics.

Name	Description	A	B	C	D	E
Weight	The index describes which part of the team defines the member with number i as valuable using some criterion.	1.00	.25	0.25	0	.25
Emotional effusiveness	The index describes which part of the team is valuable for the member with number i using some criterion.	0.50	0.50	0.50	0.50	0.50
Satisfaction	The index describes which part of choices made by the member with number i is mutual.	1.00	0	1.00	0	0
Status	The index describes how much the member with number i is attractive for others.	1.00	0	0.25	.25	0.25

Weight

The index describes which part of the team defines the member with number i as valuable using some criterion.

$$P_i = M_i / N - 1$$

where M_i - the number of choices which member with number i have got, N - the number of members in the team.

In our team there are five members having value of M as;

$$M_a = 4, M_b = 1, M_c = 4, M_d = 0, M_e = 1$$

$$P_a = 4/(5-1) = 4/4 = 1; P_b = 1/5-1 = 1/4 = .25; P_c = 4/4 = 1; P_d = 0/4 = 0; P_e = 1/4 = .25$$

The number of members is usually more 2 and more several tens. Then:

Minimum index value: 0 (member- i didn't get any choices), Maximum index value: 1 (if $M_i = N - 1$), Range of index change: from 0 to 1.

Member A & C are getting full weight in the team but A is more important than C because he get all four +ve choices while C got three moderate choices and one +ve choices. D's weight is zero for the team while B & E are less weighted.

Emotional effusiveness

The index describes which part of the team is valuable for the member with number i using some criterion.

$$A_i = M_i / N - 1$$

where M_i - the number of choices which the member with number i made; N - the number of members in the team.

Since in this team every person has made 2 choices in which one is moderate and one is positive, so Emotional effusiveness

$$A_i = 2/(5-1) = 2/4 = .50 \text{ for each and every person}$$

$$\text{So } A_a = .50; A_b = .50; A_c = .50; A_d = .50; A_e = .50$$

Minimal index value: 0 (member- i didn't make any choices), Maximal index value: 1 (if $M_i = N - 1$), Range of index change: from 0 to 1.

In the present team, Emotional Effusiveness is .50 for the whole team which shows 50% of the team is valuable for each member of the team, indicates that positive mutual are lacking in the system but negative mutual are not active in the team, this is beneficial for the team. As neutral choices are always better than negative choices and helps to increase team cohesion.

Satisfaction

The index describes which part of choices, made by the member with number i , is mutual.

$$E_i = M_i / K_i$$

Where, M_i - the number of mutual choices (when the members choose each to other) for the member with number i ; K_i - the number of choices which the member with number i made.

$$\text{For } E_i(A) = M_i=1, K_i=1, E_i(B)=0$$

$$E_i(C)=1/1=1, E_i(D)=0, E_i(E)=0$$

$$\text{Similarly } E_i(C)=1/1=1, E_i(D)=0, E_i(E)=0$$

The index is significant if the member made at least one choice. Then:

Minimum index value: 0 (member- i don't have any mutual choices), Maximum index value: 1 (obviously, that $M_i \leq K_i$ is always true), Range of index change: from 0 to 1.

For A & C we get maximum index value because they have mutual positive choices while others do not have any mutual positive choices hence the satisfaction level is 0 for them. As Johnson mention that individual grows from society, so satisfaction level increases with other's responses.

Status

The index describes how much the member with number i is attractive for others.

$$S_{ta} = \frac{M_i^+ - M_i^-}{N-1}$$

where – M_i^+ the number of positive choices, which member with number i have got; M_i^- the number of negative choices, which member with number i have got; N -the number of members in the team.

We can see that the index depends on positive and negative choices simultaneously. Its value is always the same both for positive and for negative choices.

Minimum index value: 0 (member- i didn't get any choices), Maximum index value: 1 (member- i got all possible choices, the number of which is $N-1$), Range of index change: from 0 to 1.

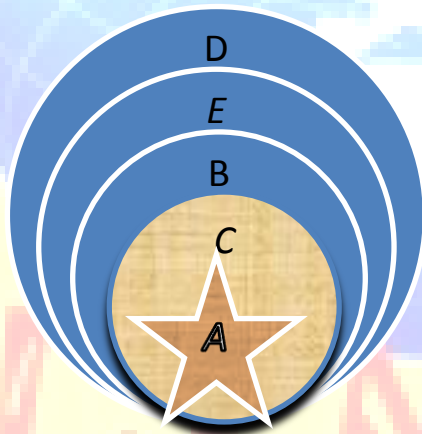
$$S_{ta}(A)=1, S_{ta}(B)=0, S_{ta}(C)=.25, S_{ta}(D)=.25, S_{ta}(E)=.25.$$

Since A got all positive choices its value is 1, B get only one moderate choice and no positive choice ,its value is 0, C got only one positive choice and its value is .25, while D & E got one negative choice each and values .25 for dislikening in the team. It is clear that A & C has higher

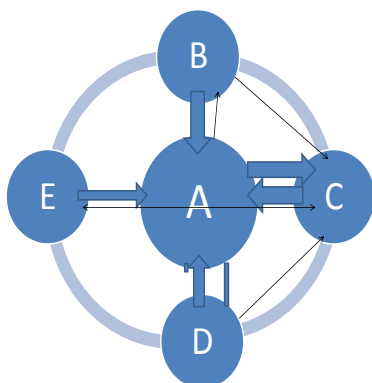
status in the team, B has neutral position while D & E have comparatively lower status in the team.

Sociogram

Sociogram is a scheme of reactions amongst the team members to each other to a predefined sociometry questions. Sociogram provides comparison analysis for the team structure relations at a plane with special signs. Sociogram is an important addition to a table approach when analyzing the sociometry data because it gives the way for deeper and more qualitative presentation of the team relations. Analysis based on usages of sociogram is started from looking for the most influencing member, pairs of members and internal teams in the team. The internal team consists of mutually related people striving to choose to each other. Sociogram of the present team is given below;



This Sociogram reveals the focussed or star position of A, Succeeding by C while D is having distances from the centre so having isolated position in the team.



- : Moderate Choice
- : Positive Choices
- ←————— : Mutual Moderate
- : Negative Choices

This Sociogram shows the team dynamics of inner relations where A is receiving all possible positive choices, A chooses C as positive so they are forming mutual relations. C is receiving three moderate choices; B & E are receiving one moderate choice D is not receiving any positive or moderate choice

Conclusion

On the bases of Soicograms and Sociometrics we can conclude that, A is the Star of the team, C has the capacity to become Star and has more acceptability than others in the team. Member B is neutral for the team because it got only one moderate choice, D is isolate as he got only one choice which is negative, E is also showing lower status as it got one moderate and one negative choice. Since the cohesiveness of the team is very low, so, if star of the team is on leave then there will be less coordination among the members. The team is needed to utilize or encourage the capacity of member B, while D & E need some training for improvement or they can also work on themselves to get more interactive and beneficial for the team.

Density, intensity and cohesion in the team is low. Team needs to work on these aspects to improve inner relations. To create mutual attractions within the members and to reduce dissatisfaction among them the team should organize some psycho-social training programmes. Absence of negative choices indicates that there is no threat to team stability. The team shows similar trend for the question with whom you wish to work? Here again A is the Star choice of the team and the same level of density cohesion, stability and intensity, so another analysis is not required for this question. We can conclude undoubtedly that member A is the popular person as well as the leader of the group.

REFERENCES

- Johnson , H. M.(1970). *Sociology: A Systematic Introduction*, Brace & World, New York
- MacIver, Robert M , Charles Hunt Page(1937). *Society: An Introductory Analyses*,New York : Holt, Rinehart and Winston
- Moreno, J. L. (1932). (In Collaboration with E. Stagg Whitin) (1932). *Application of the team method in classification*. New York: National Committee on Prisons and Prison Labor.
- Moreno, J. L. (1934). *Who shall survive? A new approach to the problem of human interrelations*. Washington, D.C.: Nervous and Mental Disease Publishing Co.
- Moreno, J. L. (1935). Organization of the social atom. *Sociometric Review*, New York State Training School for Girls, Hudson, NY.
- Moreno, J. L., and Jennings, H. H. (1938). Statistics of social configurations. *Sociometry*, 1 (3-4).
- Moreno, J. L. (1953b). *Who shall survive? Foundations of sociometry, team psychotherapy and sociodrama* (2nd ed.). Beacon, NewYork: Beacon House. (Revised and expanded version of 1934 1st ed.)
- Moreno, Z.T. (1954). Sociogenesis of individuals and teams. In J.L. Moreno, et al. (eds.), *The international handbook of team psychotherapy*. New York: Philosophical Library.
- Moreno, Z.T. (1978). Psychodrama. In H. Mullan & M. Rosenbaum (Eds.), *Team Psychotherapy* (2nd Ed.). New York: The Free Press.
- Wolman, Shepard. (July-Oct. 1937). Sociometric planning of a new community. *Sociometry*, 1 (1).